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10/823,712

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Jae-Bon Koo

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06/02/2006

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EXAMINER

FÜLK, STEVEN J

ART UNIT

PAPER NUMBER

2891

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/823,712

Applicant(s)

KOO ET AL.

Examiner

Steven J. Fulk

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment filed April 5, 2006, which amends claims 12-13 and 15-18, has been entered. Claims 11 and 19 were previously withdrawn. Claims 1-10 and 12-18 are currently pending.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. '098.

- a. Regarding claims 12, Yamazaki et al. discloses a flat panel display comprising a plurality of pixels, each of the pixels including red, green and blue unit pixels, and each of the pixels including a transistor (¶282-283), wherein the transistor of one of the unit pixels includes a channel layer made of silicon layers (¶180) having a different film quality, wherein the different film quality is the dimensions (W/L ratio) of the layer.

- b. Regarding claim 13, Yamazaki et al. further discloses the transistors of two unit pixels to include channel layers made of silicon layers of a different film quality, wherein a length of a first silicon layer having low current mobility and a length of a second silicon layer having low current mobility are

different (recrystallized amorphous silicon is read as having low mobility; the W/L ratio of the pixel transistor is different, ¶282-283).

***Response to Arguments***

4. Applicant's arguments, see page 10, with respect to the objection to the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn.
5. Applicant's arguments, see pages 10-11, with respect to the rejection of claims 13 and 18 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, have been fully considered and are persuasive. The rejection of claims 13 and 18 has been withdrawn.
6. Applicant's arguments, see pages 11-12, with respect to the rejection of claims 1-10 and 14-18 under 35 U.S.C. 103(a) have been fully considered and are persuasive. The rejection of claims 1-10 and 14-18 has been withdrawn.
7. Applicant's arguments with respect to claims 12-13 have been considered but are moot in view of the new ground(s) of rejection as set forth above.

***Allowable Subject Matter***

8. Claims 1-10 are allowed.
9. Claims 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter: a reasonable search of the prior art did not find a flat panel display comprising red, green and blue unit pixels, each of the unit pixels including a

transistor, and wherein transistors of at least two unit pixels include channel layers with different current mobilities, as recited in independent claim 1.

The search also did not find a flat panel display wherein a transistor of one of the unit pixels among the R, G and B unit pixels includes a channel layer having a different film quality and all of the unit pixels having the same channel length, as recited in claims 14 and 15.

Yamazaki et al. '098 discloses a flat panel display comprising red, green and blue unit pixels, each of the unit pixels including a transistor, and wherein at least one of the transistors of the unit pixels include channel layers with a different film quality (channel dimensions), however the mobility of the channel regions are the same and the channel lengths are different.

Takemura '716, Zhang et al. '733 and Joo et al. '130 disclose a flat panel display having transistors with different current mobilities, however it is the drive transistors and the pixel transistors that have different mobilities. The unit pixel transistors have the same mobility and film qualities.

Yamada '025, Cok et al. '549 and Kim et al. '819 disclose a flat panel display comprising red, green and blue unit pixels, each of the unit pixels including a transistor, wherein white balance is achieved using different areas of luminescent material. However, the unit pixel transistors have the same mobility and film qualities.

Yamazaki '565 and Tanaka '647 disclose a flat panel display comprising red, green and blue unit pixels, each of the unit pixels including a transistor, wherein

white balance is achieved using a different thickness of luminescent material. However, the unit pixel transistors have the same mobility and film qualities.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

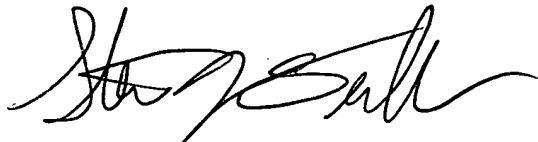
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Fulk whose telephone number is (571) 272-8323. The examiner can normally be reached on Monday through Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister, can be reached on (571) 272-1722. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Steven J. Fulk  
Patent Examiner  
Art Unit 2891



**BRADLEY K. SMITH**  
**PRIMARY EXAMINER**

May 26, 2006